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THE LOSS OF PROTO-TIBETO-BURMAN FINAL VELARS IN STANDARD JINGHPAW*

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Abstract
The aim of this paper is two-fold: to show that the standard dialect of Jinghpaw has irregularly lost several final velars of Proto-Tibeto-Burman based on comparative evidence; and to attempt to show that the lost velars are reconstructable for an earlier stage based on both Standard Jinghpaw-internal and external evidence. Standard Jinghpaw has played an important role in Tibeto-Burman historical-comparative linguistics due to its phonological conservativeness. The loss of final velars is one notable exception, and recognizing this phenomenon enables us to identify and establish more cognate sets between Jinghpaw and closely related languages that provide a basis for a more robust reconstruction of proto-languages. The irregular loss of proto-final velars also provides some implications for the internal classification of Jinghpaw.

Keywords: historical-comparative linguistics, sound change, velar deletion, Jinghpaw
ISO 639-3 codes: kac, sgp, ckh, zkd

1 Introduction

Jinghpaw (Jingpho) is a Tibeto-Burman language spoken in northern Burma and adjacent areas of China and India. It has played an important role in the reconstruction of Proto-Tibeto-Burman (PTB) due to its phonological conservativeness (Benedict 1972, Matisoff 2003, among others).[1] The standard dialect of the language (SJ), spoken in the southern part of the distribution of the language, is one of the most well-described and documented dialects of the language. Most comparative studies make use of this dialect as representative data for the language. Although it is true that SJ preserves the proto-segmental phonemes

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[1] The data of Standard Jinghpaw (SJ), Dingga (DG), Duleng (DL), and Gauri (GR), unless otherwise noted, are based on primary data collected by the author in northern Burma between 2009 and 2017. The data on other languages and dialects are drawn from the following secondary sources: Anong (Sun *et al*., eds. 1991); Ao (Bruhn 2014); Bengni (Sun 1993); Bokar (Sun 1993); Cak (Huziwara 2012, 2014); Chang (Weidert 1987); Ganan (Huziwara 2012, 2014); Garo (Benedict 1972, Matisoff 1987, 2003); Kadu (Huziwara 2012, 2014); Kokborok (Tripuri 1988); Konyak (Weidert 1987); Lai (VanBik 2009); MC (Middle Chinese, Baxter and Sagart 2014); Mizo (Matisoff 2003, VanBik 2009), Meithei (Marrison 1967); Nocte (Weidert 1987); NP (Numhpuk Singpho, SEAlang Library Singpho Dictionary); OB (Old Burmese, Nishi 1999); OC (Old Chinese, Baxter and Sagart 2014); OT (Old Tibetan, Hill 2012, Nathan W. Hill, p.c., 2018); PBG (Proto-Bodo-Garo, Burling 1959); PCN (Proto-Central Naga, Bruhn 2014); PKC (Proto-Kuki-Chin, VanBik 2009); PL (Proto-Luish, Huziwara 2012, 2014); PLB (Proto-Lolo-Burmese, Matisoff 2003); PLo (Proto-Loloish, Bradley 1979); PNN (Proto-Northern Naga, French 1983); PTam (Proto-Tamangish, Mazaudon 1994); PTani (Proto-Tani, Sun 1993); PTB (Proto-Tibeto-Burman, Matisoff 2003); Shan (Sao Tern Moeng 1995); Tiddim (VanBik 2009); Zaiwa (Huang and Dai eds. 1992). For transliteration of Written Tibetan (WT) and Written Burmese (WB), this paper follows the Wylie's and Duroiselle's methods for transliterating scripts, respectively (Wylie 1959, Duroiselle 1916).

quite well, one notable exception to this pattern is the loss of several PTB velar finals in phonologically unrelated etyma, as shown in the comparison given in Table 1 with data from Written Tibetan (WT) and Written Burmese (WB). This sound change is an irregular innovation in that the robust regular reflexes of the PTB *-k and *-ŋ in SJ are *-ʔ* and *-ŋ*, respectively (see Section 3).

Table 1: *The diachronic loss of final velars in SJ*

	PTB	SJ	WT and/or WB
'scoop / sweep'[2]	*k/p-y(w)ak	yé[3]	WT 'phyags, WB phyak
'outer covering / skin'[4]	*s/r-kwak	ko 'eyebrow'	WT skog 'bark', WB akhok
'plantain / banana'[5]	*s-ŋak	ləŋá	OB ṅhak
'cat / wildcat / tiger'[6]	*m/s-rwaŋ	ɛəro 'tiger'	OB kroṅ 'cat'
'upper arm / wing'[7]	*k(w)aŋ	sìŋko 'wing'	WT gong 'upper part'
'horse'[8]	*s/m-raŋ	gùmrà	WB mraṅ[3]

The aim of this paper is two-fold: to show that SJ has irregularly lost several PTB final velars based on comparative evidence from its reconstructed parent and daughter languages (PTB and Proto-Luish); and to show that the lost velars can be reconstructed for an earlier stage of the language based on Standard-Jinghpaw internal evidence and comparative evidence from other less-documented dialects of the language. The rest of this paper is organized as follows. Section 2 provides basic facts about Jinghpaw dialects and their close relatives. Regular reflexes of PTB finals in SJ will be given in Section 3, followed by Section 4 wherein irregular reflexes of PTB final velars will be presented. Some pieces of evidence that indicate the existence of the lost velars at an earlier stage of Jinghpaw will be provided in Section 5. Section 6 concludes this paper by pointing out the importance of recognizing this innovation for both Jinghpaw-internal and external comparative studies.

2 Jinghpaw dialects and their close relatives

2.1 Jinghpaw and its dialects

Jinghpaw is spoken in a broad region stretching from upper northeastern India across northern Burma beyond the Burma-China border into southwestern Yunnan province of China. The population of speakers is estimated to be 630,000 in Burma (Bradley 1996), 37,000 in China (Dai 2012), and 5,000 to 6,000 in India (Morey 2010). Due to its wide distribution and large population, Jinghpaw has a number of "dialects", not all of which are mutually ineligible. They can be divided into the southern and northern groups based on the irregular loss of proto-velar finals (see Section 6). The former is spoken in the southern distribution of the language, including SJ spoken in and around Bhamo and Myitkyina, Kachin state of Burma (Hanson 1906), Gauri spoken in hill tracts east of Bhamo, Kachin state of Burma (Kurabe 2015), and Nhkum spoken in Tongbiguan, Yunnan province of China (Dai 2012). The latter is located in the northern part of the Jinghpaw distribution, including Duleng and Dingga spoken in and around Putao, Kachin state of Burma, and Numhpuk and Turung spoken in Upper Assam of India (Morey 2010).

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[2] Cak səp^{h}áiʔ (< PL *s-phrék?), Ao a^{3}-uk^{1} (< PCN *(w)uk), Lai phiak-I, phiaʔ-II (< PKC *phiak), Bokar pək (< PTani *pək)

[3] From Proto-Jinghpaw *we (Kurabe 2014).

[4] 革 MC keak, OC *[k]^{ʕ}rək 'hide, skin', PLB *ʔ-guk^{L}, Bengni ka-kuk (< PTani *kruk)

[5] PNN *ŋa:k 'plantain'

[6] PLB *k-roŋ^{1} 'cat / wildcat', Thakali ^{54}maŋ (< PTam *^{B}maŋ 'tiger')

[7] 肱 MC kwong, OC *[k]^{wʕ}əŋ '(upper) arm'

[8] The reviewers suggest that this item is a Wanderwort and not an inherited word given its relatively later attestation in the Asian archaeological record (Anthony 2007:456–7). The loss of the velar nasal in Jinghpaw is suggested by its existence in the WB and many other related forms, e.g., PLB *mraŋ^{2} 'horse', PKC *raŋ 'horse', Japhug mbro < *mraŋ (Jacques 2004:228–30).

2.1 Jinghpaw and closely related languages

The closest relatives of Jinghpaw within Tibeto-Burman are Luish (Asakian) languages (Huziwara 2012, 2014, Matisoff 2013), which include Cak, Kadu, Ganan, Andro, and Sengmai (Sekmai). Cak is spoken in northern Arakan of Burma and in the Chittagong Hill Tracts of Bangladesh. Kadu and Ganan are two closely related languages spoken in Bamauk of Sagaing Region, Burma. Andro and Sengmai were formerly spoken in Manipur State of India, but their speakers have switched to Meithei and their languages have now become extinct. Huziwara (2012, 2014) and Matisoff (2013) provide a large number of cognate sets between Jinghpaw and Luish languages, thirty-four of which, as illustrated in (1), do not appear in other Tibeto-Burman groups (Matisoff 2013). Huziwara (2012, 2014) reconstructs about 500 Proto-Luish etyma based on primary data collected through intensive fieldwork.

(1)	Jinghpaw	Cak	Kadu	Ganan	Proto-Luish
a. ‘frog’	ɕùʔ	kəsuʔ	kəs^{h}òuʔ	kəs^{h}àuʔ	*k^{H}-suk
b. ‘insect / leech’	lətuŋ	kətuŋ	kətòuŋ	kətàuŋ	*k^{H}-tuŋ
c. ‘watch’	yu	yu	yu	yu	*yu

Higher-order classifications are also suggested for Jinghpaw. Especially important is the special relationship between Jinghpaw, Bodo-Garo (incl. Bodo, Garo, and Kokborok), and Northern Naga (incl. Nocte, Konyak, and Chang). This special connection is somewhat recognized by Grierson ed. (1903), as its title “Bodo-Naga-Kachin” suggests. Burling (1971) conducted one of the earliest studies which provides linguistic evidence for this relationship building upon lexical comparison, showing that Jinghpaw and Garo share suggestive lexical items such as ‘drink’, ‘fire’, ‘long’, ‘neck’, and ‘sun’, related items of which “are unusual or missing from languages other than Jinghpaw, the Bodo group or the northern Naga group” (Ibid. 26). Benedict (1972: 7) also points out the special “points of contact” of Bodo-Garo, Northern Naga, and Chairel with Jinghpaw, providing the distinctive shared roots for ‘sun’ and ‘fire’ given in (2) in contrast to the more widespread PTB etyma *niy ‘sun’ and *mey ‘fire’.

(2)	Jinghpaw	Namsang	Moshang	Garo	Chairel
a. ‘sun’	dźan	san	śar	sal	sal
b. ‘fire’	ʔwan	van	var	waʔl	phal

Benedict (1976) recognizes a special relationship between Garo and Jinghpaw based on scores of lexical comparisons between several Sino-Tibetan languages, concluding that “[t]he Garo scores are in a very low range (18 to 21), with the striking exception of the score (29) for the G/K [Garo-Jinghpaw] pairing, one of the highest scores in the table. The conclusion here must be that Garo also represents an early split from the parent TB group but one that also included Kachin [Jinghpaw], with at least nine of the shared items being considered innovative” (Ibid. 17). Burling (1983), who proposes the name “Sal languages” to collectively refer to Jinghpaw, Bodo-Garo, and Northern Naga based on the distinctive etymon *sal ‘sun’, investigates the relationship in more detail. He proposes many cognate sets between these languages, including possible Sal innovations, e.g., ‘ash’, ‘burn’, ‘cook’, ‘cooking pot’, ‘crow’, ‘drink’, ‘far’, ‘father’, ‘fire’, ‘insect / worm’, ‘leg / foot’, ‘live / green’, ‘long’, ‘mother’, ‘salt’, ‘sky / rain’, ‘sun’, among others. DeLancey (2011) provides further evidence for the Jinghpaw-Nocte relationship based on “the formal, structural, and functional correspondences between the Jinghpaw and Nocte systems” of the verbal endings (Ibid. 71).

3 The regular reflexes of PTB finals in SJ

Benedict (1972) and Matisoff (2003) reconstruct the eleven final consonants for PTB in Figure 1.

Figure 1: *PTB final consonants.*

-p	-t			-k
-m	-n			-ŋ
	-s			
-w	-l	-r	-y	

SJ, as demonstrated by Benedict (1972) and Matisoff (2003), preserves PTB finals *-p, *-t, *-m, *-n, and *-ŋ as such, except the rhyme *-yam, which has developed into SJ *-en*, and the rhyme *-eŋ for which SJ hesitates between *-eŋ* and *-en*. PTB *-k has regularly been reduced to a glottal stop. PTB *-r and *-l have developed into *-n*, merging with PTB *-n. PTB *-s has developed into *-t*. Table 2 provides cognate sets between SJ, WT, and WB, together with PTB etyma, which establish the regular correspondences of root-final consonants summarized above (Matisoff 2003).

Table 2: *Comparison of root-finals of PTB, SJ, WT, and WB*

	PTB	SJ	WT	WB
'road'	*lam	lam	lam	lam[3]
'bore / pierce'	*lwan	gəlùn		lwan
'valley / river'[9]	*klu(ː)ŋ	kruŋ	klung	OB khloṅ
'fold / layer'[10]	*l-tap	thàp	lteb	thap
'kill'[11]	*g-sat	sàt	gsod	sat
'pig'[12]	*pʷak	wàʔ	phag	wak
'bloom / flower'	*baːr	pan	'bar	pan[3]
'clear'[13]	*g-sal	sàn	OT bstsal	sā
'bone'[14]	*g-rus	ṅrút	rus	rui[3]

The regular reflexes of PTB velar finals *-k and *-ŋ in SJ are thus *-ʔ* and *-ŋ*, respectively. These are well-established regular correspondences based on a large number of cognate sets. Table 3 presents further examples (Matisoff 2003).

Table 3: *Comparison of root-final velars of PTB, SJ, WT, and WB*

	PTB	SJ	WT	WB
'ascend / up'[15]	*l-tak	ləthàʔ	ltag	tak
'weave'[16]	*t(r)ak	dàʔ	'thag	rak
'six'[17]	*d-k-ruk	krúʔ	drug	OB khrok
'ravine / gulf'	*grok	khəróʔ	grog	OB khlok[18]
'below / under'[19]	*ʔok	lə-wúʔ	'og	ʔauk
'name'[20]	*r/s-miŋ	myiŋ	OT mying	mañ
'land'	*gliŋ	kriŋ-muŋ	gling	krañ
'dream'[21]	*r/s-maŋ	ʔmaŋ	rmang	hmaŋ
'smell / scent'	*b-suŋ ~ b-saŋ	suŋ	bsung	saṅ[3]
'peacock / pheasant'[22]	*m-doŋ ~ daŋ	ʔù-toŋ	mdongs	u-doṅ[3]

[9] 江 MC kaewng, OC *kˤroŋ '(Yangzi) river'
[10] 疊 MC dep, OC *lˤ[i]p 'double, accumulate'
[11] 殺 MC sreat, OC *s<r>at 'kill'
[12] 豝 MC pae, OC *pˤra 'sow, pig'
[13] 粲 MC tshanH, OC *[tsʰ]ˤar-s 'bright and white'
[14] 頊 MC gwij, OC *[g]ʷru 'cheek bone, bones of the face'
[15] 陟 MC trik, OC *trək 'ascend'
[16] 織 MC tsyik, OC *tək 'weave (v.)'
[17] 六 MC ljuwk, OC *k.ruk 'six'
[18] The OB form does not straightforwardly correspond to WT (suggested by Reviewer 1).
[19] 後 MC huwX, OC *[ɢ]ˤ(r)oʔ 'after'
[20] 名 MC mjieng, OC *C.meŋ 'name'
[21] 夢 MC mjuwngH, OC C.məŋ-s 'dream'
[22] 孔 MC khuwngX, OC *[k]ʰˤoŋʔ 'peacock'

One detail to note here is that although PTB *-k, as noted above, has developed into a glottal stop, modern SJ phonology also has final *-k*. Most of these items, as pointed out by Matisoff (1974), are of Shan or Burmese origin, as illustrated by the examples in Table 4 (for more examples, see Kurabe 2017).

Table 4: *Shan and Burmese loanwords in SJ*

	SJ	Shan		SJ	WB
'bridle'	gàk	kak^{5}	'age'	ʔəsàk	asak
'catfish'	bəlúk	paa^{1}luk^{4}	'cannon'	ʔəmyòk	amrok
'chisel'	tók	tɔk^{2}	'carpenter'	làksəmá	laksamā^{3}
'package'	cók	tsɔk^{4}	'charm'	làkphóy	lakphwai^{1}
'rope'	jìk	tsɤk^{3}	'depository'	dèk	tuik
'search'	sòk	s^{h}ɔk^{3}	'guess'	tàk	twak
'soldier'	lúksúk	luk^{3}s^{h}ɯk^{4}	'measles'	wàksàk	waksak
'teak'	màysàk	maj^{5}s^{h}ak^{4}	'period'	làkthàk	lakthak
'weight'	nàmnák	nam^{5}nak^{4}	'recover'	sáksà	saksā
'yoke'	ʔék	ʔɛk^{2}	'weapon'	làknàk	laknak

4 Irregular reflexes of PTB final velars in SJ

*4.1 The loss of PTB *-k*

Some PTB etyma with final *-k, as noted in Section 1, appear in SJ with Ø, as demonstrated by examples in Table 5 below.[23] This is an irregular correspondence in that, as shown in Section 3, the vast majority of PTB *-k is reflected in SJ as a glottal stop. The motivation for this diachronic irregularity remains unknown, resisting a plausible explanation, although it would be attributed to analogy or other mechanisms of secondary change. What is important here is the fact that the items that underwent the loss are not conditioned phonologically, as the items in Table 5 resist generalization. This is further demonstrated by a comparison of near-minimal pairs (e.g., PTB *s/r-kwak 'outer covering / skin' and SJ *ko* 'eyebrow' vs. PTB *kwa-k 'hungry / thirsty' vs. SJ kóʔ-(si) 'hungry').

Table 5: *The loss of final velar stops in SJ (1)*

	PTB	SJ	Other TB
'scoop / sweep'	*k/p-y(w)ak	yé	WT 'phyags, WB phyak
'outer covering / skin'	*s/r-kwak	ko 'eyebrow'	WT skog, WB akhok
'plantain / banana'	*s-ŋak	ləŋá	OB ṅhak
'cook / boil'	*s-(k/g)lak	khya	OB khyak
'rock / stone'	*b-rak	lùŋ-brá	WT brag, Garo roŋ-brak 'rock'
'filth(y) / excrement'	*s-nyak	ʔnyí	WT snyigs, WB ññac, Garo ant śnek 'dirt'
'phlegm / sputum'[24]	*k(r)aːk	məkhá	Nocte thoʌk-kaʔ 'saliva'
'red / black'	*tsya(k/ŋ)	jà 'gold'	Garo gittśak 'red', Kokborok kə=čaʔ 'red'

It is also of importance to note that, as shown in Table 6, some Proto-Luish (PL) etyma with final *-k correspond to SJ items with final Ø, although many of them are not reconstructable to the PTB stage. As demonstrated by Huziwara (2012, 2014) and Matisoff (2013), the regular comparanda of the PL *-k in SJ are glottal stops, as illustrated in Table 7 given below. These data suggest that SJ has lost final velars for these items, too.

[23] Velar finals are more easily lost than bilabial and alveolar finals in Tibeto-Burman, as Benedict (1972: 14) puts it: "[t]he final velars (*-k*, *-ŋ*) tend to disappear much more readily than do the dentals or labials, e.g. in Thebor as contrasted with Kanauri, in Dimasa as contrasted with Garo, in Kachin [Jinghpaw] and Nung, and in practically all modern Burmese-Lolo languages as contrasted with Old Burmese." He mentions the reduction of -k to glottal stop in Jinghpaw, but not the complete loss of velar finals.

[24] Tiddim khaːk^{1} soʔ^{3}, Lai khaak, Mizo khăak (< PKC *khaak)

Table 6: *The loss of final velar stops in SJ (2)*

	PTB	PL	Cak (Kadu)	SJ
'spit'[25]	*m/s-tuːk	*thók	tʰóʔ	məthó
'high'		*cók	cóʔ	tsò
'tear'		*sék	sáiʔ	jé
'mosquito / fly'		*p-cík	pəcíʔ	məcî
'belly / guts'[26]	*puːk	*piʁ?	ʔapíʔ	pù
'husk of rice'		*hók	yáʔhóʔ	númkhó
'sap'		*nók	ʔanóʔ	nó
'soft'		*yak	Kadu pùtyaʔyaʔ	kyà
'pull out'		*pók	ʔapóʔ	bó

Table 7: *Regular correspondence of final velar stops*

	PTB	PL	Cak	SJ
'weave'	*(t/d)ak	*tak	taʔ	dàʔ
'lick / tongue'	*m/s/g-lyak	*á-tak	ʔátaʔ	mətáʔ
'breath / life'	*m-sak	*sak	svusaʔ	ǹsàʔ
'black / night'	*s-nak	*nak	naʔtaiʔ	ɕənáʔ
'pig'	*pʷak	*wak	vaʔ	wàʔ
'eye'	*s-mik	*mík	ʔamíʔ	myìʔ
'louse'	*s-r(y)ik	*sik	siʔ	tsíʔ
'head / neck'	*tuk ~ *twak	*kᴴ-duk	ʔákəduʔ	dùʔ
'frog'		*kᴴ-suk	kəsuʔ	ɕùʔ

Some of these irregular correspondences have already been recognized in part by previous studies. Matisoff (2003:317–8, 323) notes that SJ *khya* 'prepare glutinous rice' "is irregular, in that it lacks final glottal stop" (Ibid. 318) and that SJ *jà* 'gold' shows "unexplained loss of -ʔ" (Ibid. 323), providing such comparisons as PTB *s-glak 'boil / cook', SJ *khya*, WB *kyak*, Mizo *tlak*, and PTB *tsyak 'red / gold', SJ *jà* 'gold', Mizo *raŋ-ka-tśak* 'gold', Garo *gittśak* 'red' (and perhaps WT *khrag* 'blood'). Matisoff (2013:47) notes that there are some correspondences in which SJ open syllables correspond to Luish final consonants, remarking that these examples perhaps imply a Luish suffix. He provides such comparisons as SJ *pù* 'guts' vs. Kadu *púk* 'belly', SJ *məcî* 'fly' vs. Cak *pəcíʔ* 'mosquito', and SJ *núm-khó* 'husk' vs. Cak *yáʔhóʔ* 'husk'. Our data above may suggest the reverse direction: SJ has lost finals that are retained in Luish.

*4.2 The loss of PTB *-ŋ*

A parallel irregular development is observed for PTB final nasal *-ŋ. As noted in Section 1, some PTB etyma with final *-ŋ appear in SJ with Ø, as demonstrated by examples in Table 8. This is an irregular correspondence in that, as noted in Section 3, PTB *-ŋ is mostly reflected in SJ as *-ŋ*. Again, the irregularity appears to not be conditioned phonologically, as can be seen from a comparison of near-minimal pairs such as PTB *s/m-raŋ 'horse' and SJ *gùmrà* 'horse' vs. PTB *m/s-raŋ 'rain' and SJ *məraŋ* 'rain'.

Table 8: *The loss of PTB *-ŋ in SJ*

	PTB	SJ	Other TB
'cat / wildcat / tiger'	*m/s-rwaŋ	ɕəro 'tiger'	WB kroṅ 'cat'
'upper arm / wing'	*k(w)aŋ	sìŋko 'wing'	WT gong 'upper part'
'horse'	*s/m-raŋ	gùmrà	WB mraṅ[3]
'bone / skeleton'	*g-r(w/y)a(ŋ/k)	ǹra	Garo greŋ, Konyak ɣɛŋ
'foot'[27]	*r-kwa(ŋ)	ləgo	Meithei khong
'head'	*(p/b)wa(ŋ)	bo	Anong lap[31]huŋ[55]

[25] Nocte thoʌk, Konyak tok, Chang tòk (< PNN *tʰoːk 'spit')

[26] Nocte vok, Konyak ɣɔk (< PNN *wuk 'belly'), Bodo uʔ-dəi, Garo ok (< PBG *Vk 'stomach')

[27] As noted in STEDT #5621, this etymon bears a strong resemblance to PTB **r-k(y)aŋ* 'foot / leg'.

Although all the words in Table 8 are semantically related, denoting animals or body parts, it is not the case that all PTB etyma denoting them have undergone the loss of finals. Compare the following items with those in Table 8: SJ *nsaŋsòn* 'lizard' (PTB *r-saŋ 'lizard'), SJ *ʔù-toŋ* 'peacock' (PTB *m-dwaŋ 'peacock'), SJ *gəlaŋ* 'eagle' (PTB *g-la(ŋ/k) 'falcon'), SJ *gòŋ* 'body' (PTB *guŋ 'body / back'), SJ *màydàŋ* 'buttocks' (PTB *m-daŋ 'buttocks'), SJ *ǹruŋ* 'horn' (PTB *m/g-(r)wa-ŋ/k/t 'horn / angle / corner'), and SJ *ǹɛaŋ* 'waist' (PTB *k/m-sya(ŋ/n) 'waist').

5 Reconstructing the lost velars for Proto-Jinghpaw

The lost SJ final velars demonstrated in Section 4, at least some of them, are reconstructable for an earlier stage of Jinghpaw based on both SJ-internal evidence and comparative Jinghpaw evidence.

*5.1 Proto-Jinghpaw *-k*

5.1.1 SJ-internal evidence

Some of the lost SJ velar stops are reconstructable for the proto-stage of the language based on SJ-internal evidence. As pointed out by Matisoff (1986) and Dai (1995), relic forms are sometimes preserved in compounds in Jinghpaw. Matisoff (1986:50) shows that Jinghpaw retains the reflex of the widespread PTB etymon *s-nak 'black' in certain compounds, or elaborate expressions (Elab's), as given in (3), although the more general word denoting 'black' in the modern language is *caŋ*. Matisoff (1986:50) puts it as follows: "[t]his illustrates the great comparative-historical importance of Elab's, many of which enshrine morphemes which have otherwise passed out of use."

(3) myìt-caŋ-myìt-nàʔ
mind-black-mind-black
'be black-hearted'

Dai (1995:39) also provides similar observation, giving examples in (4) where the obsolete morphemes are attested in compounds.[28]

(4) a. nòʔ-caŋ (lit. bean-black) 'black soybean' (cf. ɛəpre 'bean', PTB *s-nuk 'bean', Zaiwa nuʔ[21])
b. sùm-du (lit. iron-hammer) 'iron hammer' (cf. phrì 'iron, PTB *syam 'iron', WB saṁ)
c. sə-lum (lit. liver-round) 'heart' (cf. dìn 'round', PTB *zlum 'round', WB luṁ[3])
d. sám-bân[29] (lit. hair-braid) 'braid' (cf. kərá 'hair', PTB *tsam ~ *sam, WB chaṁ)

We may be able to add a morpheme *thìŋ ~ thiŋ* 'house' to these examples. SJ has a set of house-related compounds involving the morpheme, as given in (5), although the general term for 'house' is *ńtâ*, which, as suggested by Matisoff (1999:23), seems to have its diachronic source in a lexical verb *tà* 'build' nominalized by *ń-*. The fact that the morpheme *thìŋ ~ thiŋ*, but not *ńtâ*, is comparable with PL etymon *thiŋ 'village' (Huziwara 2012) suggests its origin. Note also the fact that the Dingga dialect of Jinghpaw retains the word *thiŋ* as a general term for a house.

(5) a. thìŋ-go (lit. house-roof) 'household'
b. thìŋ-yan (li.t house-in.line) 'long house'
c. thìŋ-nu (lit. house-mother) 'house of a chief'
d. thiŋ-bu (lit. house-adobe) 'neighbour'
e. thiŋ-khrày (lit. house-alone) 'solitary house'
f. thìŋ-mùt (lit. house-bluish) 'rubbish on the site of a torn-down house'

[28] Examples are rendered into the phonemic transcription followed in this paper.
[29] According to Benedict (1972:173), the Jinghpaw morpheme *sám* 'hair' is "an apparent early loan" from Burmese.

What is relevant here is the fact that the retention in compounds also holds for phonology. Although SJ has lost some PTB final velar stops, some of them are preserved in compounds. For example, SJ *ləŋá* 'plantain' (cf. PTB *s-ŋak) appears as *ŋàʔ* in compounds with a glottal stop which has its diachronic source in a velar stop, as examples in (6) demonstrate. The same holds for the lost velar nasal, as we will see in Section 5.2.1 below.

(6) a. ŋàʔ-lì (lit. plantain-seed) 'shoot of a plantain'
b. ŋàʔ-króp (lit. plantain-?) 'a variety of wild plantain'
c. ŋàʔ-khràʔ (lit. plantain-?) 'part of a plantain used as a wrapper'
d. ŋàʔ-khron (lit. plantain-?) 'wild plantain that grows in large clumps'
e. ŋàʔ-thuŋ (lit. plantain-?) 'a variety of very large plantain'
f. ŋàʔ-tí (lit. plantain-?) 'wild plantain bud'

Notice also the fact that some items with lost final velar stops have word families with final velars (sometimes corresponding nasals). To illustrate this, consider word families given in (7). As we will see in Section 5.2.1, the same holds for lost velar nasals.

(7) a. SJ *məkhá* 'phlegm' ~ *khák* 'clear the throat' (PTB *k(r)aːk 'phlegm', Nocte thoʌk-kaʔ 'saliva')
b. SJ *məcî* 'fly' ~ *jìʔ-nu* 'housefly' ~ *jìʔ-gròŋ* 'mosquito' (PL *p-cík 'mosquito', Cak pəcíʔ)
c. SJ *yé* 'sweep' ~ *yeŋ* 'remove, as things from in the way' (PTB *k/p-y(w)ak 'sweep', WB phyak)

These facts, together with the PTB and PL evidence, suggest that SJ, at an earlier stage, had final velar stops for these items.

5.1.2 Evidence from other Jinghpaw dialects

Some Jinghpaw dialects show retention of the lost root-final velar stops. PTB final velar stops lost in SJ are sometimes reflected as *-k* in Dingga (DG) and as *-ʔ* (sometimes *-ŋ* before nasals) in Duleng (DL), Numhpuk (NP), and Turung, all of which are spoken in the northern parts of the Jinghpaw-speaking region, stretching from northeastern India to northern Kachin State of Burma. This is illustrated by lexical items given in Table 9, which suggest that the lost SJ finals are reconstructable for these words at the Proto-Jinghpaw (PJ) stage.[30]

Table 9: *Retention of the proto-velar stops in some Jinghpaw dialects*

	PTB or PL	SJ	NP	DG or DL
'scoop / sweep'	PTB *k/p-y(w)ak	yé	weʔ^{3}	DG wìk
'phlegm / sputum'	PTB *k(r)aːk	məkhá		DG məkhàk
'red / black'	PTB *tsya(k/ŋ)	jà 'gold'	jaaʔ^{2}	DG jèk
'outer covering / skin'	PTB *s/r-kwak	myìʔ-ko	miʔ^{3}kom^{4}mun^{1}	DL myi-kúŋ-mùn
'filth(y) / excrement'	PTB *s-nyak	ʔnyí	eʔ^{3}?	
'spit'	PL *thók	məthó	məthoʔ^{3}	
'high'	PL *cók	tsò	coʔ^{3}	DG cùk
'tear'	PL *sék	jé	jeʔ^{2}	DG jék
'belly / guts'	PL *pɨk?	pù		DL pŏʔ
'husk of rice'	PL *hók	númkhó		DL nùmkhŏʔ
'sap'	PL *nók	nó	noʔ^{2}	DG nŏk
'soft'	PL *yak	kyà	kəyaʔ^{3}	
'pull out'	PL *pók	bó	boʔ^{2}	DG bùk

It should be noted, however, that dialects that preserve PJ final *-k sometimes have non-etymological final glottal stops for such words as given in Table 10. Etymological and non-etymological final stops are distinguished in Dingga, where the former appears as *-k* in contrast to the latter which appears as *-ʔ*, although they are indistinguishable in Duleng, Numhpuk, and Turung, in which both of the PJ *-k and the secondary glottal stop appear as glottal stops.

[30] The table is based on data currently available to the author.

Table 10: *Non-etymological final glottal stops in some Jinghpaw dialects.*

	PTB	WB	SJ	NP	DG
'medicine'	*r-tsəy	che^{3}	tsì	ciʔ^{2}	cíʔ
'excrement'	*kləy	OB khliy	khyí	khiʔ^{1}	hìʔ
'fish'	*s-ŋya	ṅa^{3}	ŋá	ŋaa^{4}	ŋàʔ
'bitter'	*b-ka-n/m/ŋ	kha^{3}	khá	khaa^{4}	hàʔ

*5.2 Proto-Jinghpaw *-ŋ*

5.2.1 SJ-internal evidence

Some lost velar nasals are reconstructable for an earlier stage based of SJ-internal evidence. As with the lost velar stops, lost velar nasals are sometimes preserved in SJ compounds. For example, SJ *ɕəro* 'tiger' (cf. PTB *m/s-rwaŋ) appears as *ròŋ* in compounds given in (8).

(8) a. ròŋ-bà (lit. tiger-big) 'largest kind of tiger'
b. ròŋ-caŋ (lit. tiger-black) 'black panther'
c. ròŋ-gòk (lit. tiger-growl) 'leopard or cheetah'
d. ròŋ-mùt (lit. tiger-bluish) 'a species of tawny coloured tiger'
e. ròŋ-tèŋ (lit. tiger-spotted) 'leopard'

The same holds for SJ *bo* 'head' (cf. PTB *(p/b)wa(ŋ)), which appears as *bùŋ* or *puŋ* in compounds given in (9). Although the vowel quality does not show a straightforward correspondence, it is hardly controversial that it denotes the concept of 'head', constituting a word family with *bo*. Note also that the final nasal is also retained in Jinghpaw religious poetry, i.e., *boŋ* 'head' (Hanson 1906:71).

(9) a. bùŋ-khum (lit. head-support) 'pillow'
b. bùŋ-khrùt (lit. head-wash) 'wash the head'
c. bùŋ-géʔ (lit. head-curdle) 'brain-fever'
d. puŋ-so (lit. head-dry) 'dandruff'
e. puŋ-ɕàn (lit. head-flesh) 'scalp'
f. puŋ-krin (lit. head-naked) 'baldness'

Also, as with velar stops, items with lost velar nasals sometimes have word families with velar nasals, as seen in SJ *jà* 'gold' ~ *caŋ* 'black' (PTB *tsya(k/ŋ) 'red/black'). These facts, together with the PTB evidence, suggest that SJ had final velar nasals for these words at an earlier stage.

5.2.2 Evidence from other Jinghpaw dialects

The lost PTB final velar nasals are sometimes preserved as *-ŋ* in some Jinghpaw dialects such as Gauri, Numhpuk, Turung, Dingga, and Duleng. Relevant data are provided in Table 11.

Table 11: *Retention of proto-velar nasals in some Jinghpaw dialects*

	PTB	SJ	GR	NP
'horse'	*s/m-raŋ	gùmrà	gùmràŋ	gum^{4}raaŋ^{4}
'cat / wildcat / tiger'	*m/s-rwaŋ	ɕəro	ɕəroŋ	səroo̱ŋ^{1}
'arm (upper) / wing'	*k(w)aŋ	sìŋko	sùŋkôŋ	siŋ^{4}koo̱ŋ^{1}
'foot'	*r-kwa(ŋ)	ləgo	ləgoŋ	ləgoo̱ŋ^{1}
'head'	*(p/b)wa(ŋ)	bo	boŋ	boo̱ŋ^{1}
'bone'	*g-r(w/y)a(ŋ/k)	ǹra	ǹraŋ	n^{4}raaŋ^{1}

It should be noted, however, that these Jinghpaw dialects also have some non-etymological final velar nasals for such words as given in Table 12, which are indistinguishable from the etymological ones, since both appear as *-ŋ* in these dialects.

Table 12: *Non-etymological final velar nasals in some Jinghpaw dialects*

	PTB	WB	SJ	GR	NP
'white / silver /money'	*plu	OB phlū	phrò	fròŋ	cəphooŋ[4]
'ear / hear / listen'	*r/g-na	na[3]	nà	nàŋ	naaŋ[1]

5.2.3 Variation between -ŋ and Ø in SJ

SJ appears to be still in the process of losing final velar nasals in some cases: SJ sometimes exhibits variation between *-ŋ* and Ø in certain items, for example, *məliŋ ~ məlì* 'forest' (cf. PTB *b-liŋ 'forest'), *tsaŋ ~ tsa* 'light' (cf. PTB *r-ya:ŋ 'light'), and *ləkoŋ ~ ləko* 'upper part of the ear' (cf. PTB *l-kwaŋ 'ear'). Hanson (1906) provides more such examples, some of which are given in (10).

(10) Variation between *-ŋ* and *Ø*

byoŋ ~ byo 'be melting', *khìnròŋ ~ khìnrò* 'a species of bamboo', *hkìŋ ~ hkì* 'custom', *lətsaŋ ~ lətsa* 'fingers, toes', *ləyaŋ ~ ləya* 'a plain', *məcaŋ ~ məca* 'a kind of tree', *məcaŋ-ǹdúm ~ məca-ǹdúm* 'the elbow', *məroŋ ~ məro* 'the fate of mortals in the form of a nat (spirit), of which there are said to be thirty-nine', *məyaŋ ~ məya* 'red pepper', *nàŋ ~ nà* 'sting', *ǹgàŋ ~ ǹgà* 'a shield', *ɛíŋnáŋ ~ ɛíŋná* 'a cane', *yoŋ ~ yo* 'to float, drift, as a raft'

6 Concluding remarks

This paper has shown that the standard dialect of Jinghpaw has sometimes irregularly lost PTB final velars, and that some of them are reconstructable for the proto-stage of the language based on both SJ-internal and comparative Jinghpaw evidence, together with evidence from reconstructed PTB and PL forms. Standard Jinghpaw, as noted in Section 1, is a phonologically conservative language and has played an important role in the reconstruction of PTB. Although it is true that the dialect preserves the proto-phonemes quite well as demonstrated by many studies in the literature, the irregular loss of the proto-final velars is one notable exception to this rule. Recognizing this phenomenon is important in order to establish more robust cognate sets between Jinghpaw and closely related languages. Huziwara (2012, 2014) and Matisoff (2013), who identified a large number of shared cognate sets in Jinghpaw and Luish languages, missed two Jinghpaw-Luish cognate sets because of the absence of final velars in Jinghpaw: PL *sék 'tear' and Jinghpaw *jé* 'tear', and PL *cók 'long / tall' and Jinghpaw *tsò* 'high'. As demonstrated in this paper, final *-k is reconstructable for these Jinghpaw words at an earlier stage. This fact strengthens the relationship between these Jinghpaw and Luish words.

The loss of the velar finals may also play an important role in classification of Jinghpaw dialects because irregular phonological innovations are unlikely to occur independently. Jinghpaw dialects that have undergone the loss of proto-final *-k include at least Standard Jinghpaw, Nhkum, and Gauri, and those which retain it include Duleng, Dingga, Numhpuk, and Turung. Based on their geographical distribution, the former may be called the southern group and the latter the northern group. The irregular development *-ŋ > Ø can be used to classify Standard Jinghpaw and Nhkum into a single group.

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